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NANOCOMPOSITES OF DENDRITIC POLYMERS

ABSTRACT OF THE DISCLOSURE

In the present invention, an inorganic reactant is, or reactants are, localized with respect to a dendritic polymer by physical constraint within or by a non-covalent conjugation to the dendritic polymer. The localized inorganic reactant or reactants is/are subsequently transformed to form a reaction product which is immobilized with respect to the dendritic polymer. This immobilization occurs on a nanoscopic scale as a consequence of the combined effects of structural, chemical and physical changes without having covalent bonds between the product(s) and the dendritic container and results in new compositions of matter called dendritic nanocomposites. The resulting nanocomposite material can be used to produce revolutionary products such as water soluble elemental metals, with specific applications including magnetic resonance imaging, catalytic, magnetic, optical, photolytic and electroactive applications.